Mr. Boss

The Bulletins are published weekly throughout the school year (thirty issues) to aid teachers and students in keeping abreast of geography behind current news events.

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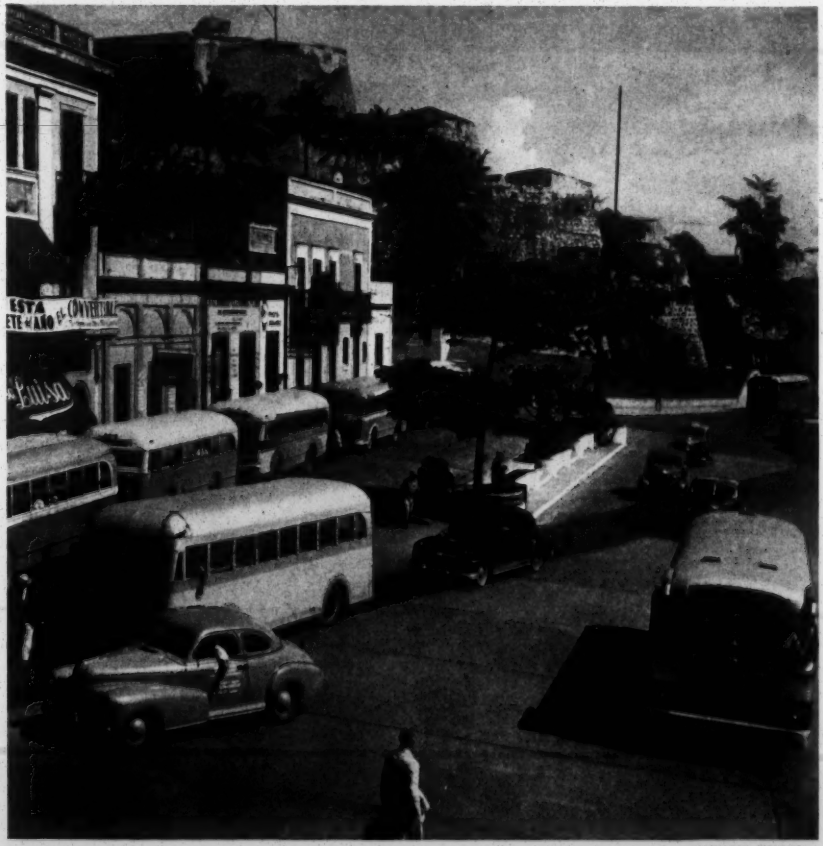

HAMILTON WRIGHT

BUSES REACH ALL PARTS OF SAN JUAN, BUSTLING CAPITAL OF PUERTO RICO (Bulletin No. 1)

Bulletin No. 1, April 23, 1951

Puerto Rico Makes Progress in Many Fields

PROGRESS is the keyword for present-day Puerto Rico. Under their own elected governor, the islanders are building dams, erecting schools, establishing new industries, developing mammoth housing suburbs, and, in general, raising living standards.

A new air service reaches San Juan (illustration, cover), the island's capital, from New York City in less than six hours. Miami, Florida, is less than five hours away by air. Thus, this overseas parcel of the United States is "moving" closer and closer to the mainland—1,000 miles away at its closest point.

Schools Teach Spanish and English

Puerto Rico (map, next page) lies in the West Indies. It is the easternmost of the Greater Antilles. It has been part of the United States since 1898 when Spain ceded it as a result of the Spanish-American War. In 1917, the islanders were declared United States citizens. Some 75,000 of them served in the armed forces during World War II. Island regiments are now distinguishing themselves in Korea.

Spanish is the natural language for most Puerto Ricans. Both English and Spanish are taught in the schools, and the use of English is increasing. The island's Spanish heritage, however, is unmistakable.

Though manufacturing has increased by leaps and bounds in recent years, farming still is the leading occupation. Farm population ranks among the densest in the world, with about 1,700 persons per square mile. This amounts to a little more than one-third an acre per person.

Sugar cane accounts for one-third the crop acreage. With machetes swinging, battalions of workers now are attacking Puerto Rico's "standing armies" of sugar cane. January to June is harvesttime, and everyone who wants work has it. Plans are already afoot for bringing 50,000-100,000 of these men to the continent to work on farms during the summer when jobs are scarce on the island.

400,000 Families on Island

Finding jobs for breadwinners is the island's big problem. To this end, the Puerto Rico Industrial Development Company has brought 100 industries to the island, thus creating about 14,500 new jobs. These concerns, large and small, turn out such products as glassware, cement, pottery, textiles, and blankets.

The island's 2,211,000 persons comprise about 400,000 families. A housing plan calls for 30,000 new living units for families now in substandard homes. In one development near San Juan more than 4,000 homes have been built and sold so far. They are made of concrete poured into aluminum forms.

Since 1940 more than 160,000 Puerto Ricans have migrated to the mainland, mostly to New York City.

ENTERED AS SECOND CLASS MATTER APRIL 27, 1943, POST OFFICE, WASHINGTON, D. C., UNDER ACT OF MARCH 3, 1879.
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JAMES K. PENFIELD

EVEN THULE, GREENLAND, ONE OF THE NORTHERNMOST SETTLEMENTS IN THE WORLD, HAS A SHORT SUNNY SUMMER (Bulletin No. 2)

But warm clothes are necessary all year long. This group looks across a bay at Thule Mountain, a name inspired by ancient man's *Ultima Thule*, the most distant land. The only Greenland community farther north is Etah, where Admiral Peary based his dash to the North Pole in 1909.

Defense Talks Center on Icy Greenland

GIs HAVE all but vanished from their World War II posts on Greenland. Will they soon again be manning air-defense and weather stations there?

Copenhagen holds the answer. United States-Danish talks which started in the Danish capital late in March carefully weighed the part to be taken by the world's largest island in the defense program of the North Atlantic Pact nations. Greenland is Denmark's only colony.

Meanwhile, Danish leaders have launched Greenland on the early stages of a $15,000,000 economic-development program. Denmark's purpose is to make the island self-sustaining in free trade within some 15 years instead of continuing it as a government trade monopoly.

Warmer Waters Hold Promise

Greenland is almost as large as the section of the United States east of the Mississippi River. Five-sixths of this 840,000-square-mile area is covered by a vast icecap up to 8,000 feet thick—the world's biggest glacier. A mere 22,000 Greenlanders (illustration, inside cover)—people largely of mixed Eskimo and Scandinavian blood—and some 500 Danes make up the frigid land's population.

If the icecap were to melt, sea level would creep higher on the shores of all continents. Because of the deep freeze, "Greenland's icy mountains," of which Americans sing, have never been seen except for small bits along the coasts. Charting the hidden ranges remains a difficult assignment for seismographic survey.

Cold windswept land that Greenland is, the way of life for its natives has changed in recent years due to noticeably warmer surrounding waters. Seals and bears have retreated northward. Cod have moved in, making the island's southern fjords into excellent fishing grounds. Sheep farming and truck growing have increased in sheltered coastal vales.

Greenlanders, therefore, have been discarding igloo, kayak, and spear. From small village homes (illustration, next page) they fare forth to fish in power boats, to tend sheep, to mine, or to work in plants processing fish, wool, and hides.

Future in Mining

The Danish development plan for Greenland aims to extend sheep raising to provide meat in the far-north diet. Improvement of harbors likewise is planned, along with expansion of fisheries to make the latter industry less dependent on cod. Construction of canneries and freezing plants are other projects on the program. Schools, hospitals, and utilities have been blueprinted to keep pace with general progress.

The search for mineral resources is included. A mine near Ivigtut produces virtually the world supply of cryolite, essential in making aluminum. Vast surface lead reserves challenge mining and exporting ingenuity. Copper, graphite, and uranium deposits also are known.

Eric the Red with his wandering band, finding the dreary coast nearly

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Fourteen thousand sugar-cane growers feed 34 sugar mills on the island. A few large landowners produce most of the sugar, however. Eight to nine tons of cane make about one ton of sugar. The return to the farmer from an acre of cane buys several times as much food as the land could grow in food crops.

Attention is being given to new crops. Bamboo was introduced and now it furnishes materials for the making of furniture, lamps, and fishing rods. Several vegetables have been studied. The pineapple industry, producing 10-pound fruits, is growing fast.

Long-established pursuits, such as the needlework industry centering around Mayagüez, also have increased in volume and scope during Puerto Rico's build-up period. Progress must continue in all fields, for, at the present rate of increase, the island will have a million more mouths to feed in 20 years.

NOTE: Puerto Rico is shown on the National Geographic Society's map of Countries of the Caribbean. Write the Society's headquarters, Washington 6, D. C., for a price list of maps.

For further information, see "Growing Pains Beset Puerto Rico," in the *National Geographic Magazine* for April, 1951; "Puerto Rico: Watchdog of the Caribbean," December, 1939 (out of print; refer to your library).

See also, in the GEOGRAPHIC SCHOOL BULLETINS, February 27, 1950, "'Operation Bootstrap' Helps Puerto Rico."

HARRY S. OLIVER AND IRVING E. ALLEMAN

BOXLIKE PUERTO RICO STRETCHES 100 MILES LONG AND 35 MILES ACROSS

San Juan proper stands on an island on the Atlantic side. Santurce, its suburb, contains four out of every five of San Juan's quarter-million population. Outer suburbs Río Piedras and Bayamón hold, respectively, the University of Puerto Rico and a Holy Week and Easter procession known all over the island. Arecibo and Aguadilla are sugar centers. Mayagüez mixes sugar and needlework. Pineapples grow in the southwest corner. Ponce is to the south part of the island what San Juan is to the north. Mountains ridge the interior.

Now generally regarded as the greatest known ocean depth is Cape Johnson Deep, northeast off Mindanao in the Philippines. It was accurately measured as 34,440 feet in July, 1950. This figure replaces a 1927 determination of 35,400 feet in the same area, produced with less exact instruments of that day.

Bulletin No. 3, April 23, 1951

Libya, a New Kingdom, Flies a New Flag

A NEW flag—red, black, and green; white star and crescent—is flying over a new nation in north Africa. It gives bright promise of independence to be achieved through United Nations cooperation.

The flag is that of Libya, Italy's prewar colony which, under UN sponsorship, is gradually taking over sovereign power from British and French administrators. Complete independence is set for January 1, 1952.

Stripes Stand for Three Provinces

Meanwhile, National Geographic Society headquarters has received what is doubtless America's first accurate description of Libya's official banner. Red, black, and green stripes run horizontally, with white crescent and star centered on the double-width black stripe.

The stripes represent the three states that make up the new Libya—red for Fezzan, green for Tripolitania, and black with crescent and star for Cyrenaica. The latter portion of the design was taken from the flag which Libya's recently chosen king—who was Emir (Prince) Sayyid Idriss el Senussi—raised for his state of Cyrenaica in 1947.

The nation over which this new flag waves has an area of nearly 680,000 square miles—the size of Britain, France, Italy, and Spain combined. The population of those four European countries is, roughly, 160 times that of the new north African kingdom.

Libya's three provinces have never been closely knit. Until the Italian conquest, the very name, Libya, was hardly more than a vague term applied to northern Africa west of Egypt. It was the word the Greeks had for all of Africa when little but the Mediterranean region was known. The word Africa came into general use with the Romans. Their African provinces they called Libya. When Rome's power died and Vandals, Arabs, and Turks successively captured the country, the name Libya fell into disuse. After Italy wrested it from Turkey in 1912, it revived the old designation, spelling it "Libia."

New Nation Faces Problems

The name now is the label for the stretch of north Africa which extends west from Egypt to Algeria and Tunisia. It is rimmed on the north by the Mediterranean and merges on the south into the desert.

Sayyid Idress el Senussi and the national assembly have a difficult task before them. The new kingdom is one of vast distances and no railroads. In Fezzan there are no telephones. Except in the cities, the people are nomadic tribesmen, living in tents, driving their sheep from one pastureland to another, casually planting a few fields of their staple food—barley. In the fall, they scratch furrows in the earth with a camel-drawn plow, sow the seed, and wander on with their flocks, leaving the barley to nature and to luck. They return in a month or so to see if it has sprouted. If not, they sow more. In April they harvest the crop, unless drought has killed it. Surplus grain is sold to buy necessities the Arab does not produce himself—tea, sugar, and cloth.

In Libya, where agriculture is the chief means of livelihood, poor

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1,000 years ago, gave it its ill-suited name, hoping to entice others to follow them. He thus set a fashion for chambers of commerce to follow through ages to come.

American troops called it Groanland, a pronunciation close to the Danish and descriptive of GI feelings at being stationed there. They staffed bases built at Narsarssuak, Sondre Stromfjord, and elsewhere by Army Engineers in weather that went to 60 degrees below zero and blew lumber around like matchsticks.

The Americans put up larger and more durable buildings than Greenland had known in all its history under Eskimos and Danes. Denmark, taking most of the stations over in postwar years, has enlarged and improved them.

NOTE: Greenland is shown on the Society's map of Canada, Alaska & Greenland. See also, "Milestones in My Arctic Journeys," in the *National Geographic Magazine*, October, 1949; "Americans Stand Guard in Greenland," October, 1946; "Servicing Arctic Airbases," May, 1946*; "Coast Guard Patrol in Greenland" (9 color photographs), May, 1943; "Greenland Turns to America," September, 1942; "Desolate Greenland Now an American Outpost," September, 1941; and, in the GEOGRAPHIC SCHOOL BULLETINS, May 8, 1950, "Bluie West-One Has Greenland's First Hotel." *(Issues marked with an asterisk are included on a special list of Magazines available to teachers in packets of ten for $1.00; issues unmarked are 50¢ a copy.)*

DR. R. J. S. TICKLE

ON UMANAK FJORD, GREENLANDERS AND THEIR DOGS LAZILY PASS A SUMMER DAY

Greenland's Eskimos live mostly in permanent homes. Some are stone and sod, such as this one; others are built of imported wood. On the rack sits the women's umiak. Crosswise under it is a kayak, used by men in seal hunting. Sealskins cover both. Dogs pull heavy sleds in winter.

Bulletin No. 4, April 23, 1951

Earth Lets off Steam Through Geysers

NEAR Lake City, California, a column of steam and hot water unexpectedly knocked off a cap of earth recently and began roaring into the air—much to the surprise of local inhabitants. This was a geyser, a sort of volcanic safety valve through which the hot mass of interior earth lets off steam.

New geysers usually come unheralded, but there is little chance that one will appear in your back yard. They have never been seen except in neighborhoods which can claim the distinction of volcanic birth.

Yellowstone Has Biggest Display

While the geyser can be found in many areas of the earth, its favorite resorts are limited to rather exclusive sections of Iceland, New Zealand, and the American West. In these widely separated localities are found the abundant hot water and complicated earth-plumbing systems necessary to geyser life. The word geyser comes from *geysir*, the name of a certain hot spring in Iceland.

More geysers play in Yellowstone National Park than in all the rest of the world. The "regulars" number somewhat more than 100, but "transients" keep appearing and disappearing from time to time in the park's six distinct geyser basins.

Old Faithful, the most famous and dependable geyser in the world, erupts about every hour (illustration, next page). Grand Geyser, a less reliable performer, can put on a good 30-minute show when in the mood. Turban plays often and violently, although its water column reaches no higher than 15 to 20 feet. Fountain Paintpot's specialty is tossing up constant showers of colored mud clods.

Churn Geyser pumps like a churn. Atomizer sprays in keeping with its name. Whistler whistles. Whirligig whirls. And Vixen Geyser is noted for temperament. Semicentennial Geyser made its debut in 1922 and did its bit only for that year, taking its name from Yellowstone's fiftieth birth year then being celebrated. Valentine Geyser was born on St. Valentine's Day, 1907.

Geysers in Harness

Geysers are creatures of an underground master, the volcanic furnace beneath the earth's crust. They go into action when steam vapors, generated by volcanic heat, build up enough pressure to push a column of water through an intricate system of "pipes" in the earth. When it reaches the surface of the ground, there usually is still enough pressure to fling water or spray into the air.

The geyser results of nature's power plant are spectacular to view, as visitors to Yellowstone will testify. Certain privately owned geysers may also prove a source of power for man. Recently engineers harnessed two more or less dependable geysers on the little island of Ischia, in the Bay of Naples.

The geysers' 30-foot columns of boiling water, it is reported, now drive turbines and dynamos, which supply electricity at trifling cost to

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soil and inadequate rainfall are basic handicaps. The UN has appointed a technical mission to survey Libya's resources. It will study methods of extending the coastal growing area, utilizing oases for date production, raising grapes for export as raisins and wine, and growing feed for the sheep on which Libyans depend for meat, wool, and leather.

In the Greek and Roman ruins, archeologists have found evidence that Libya, up to the third or fourth century A.D., was a fertile region supporting a large population. For 1,500 years the nomadic Arabs have neglected the land; wind and rain have ruined the vegetation of hills and coastal plain. Nothing has been done to halt natural erosion of the soil and desert sands have advanced on once-cultivated areas.

It is hoped that modern enterprise can bring the land into fertility again. Olive trees planted by the Italians are now bearing, and, with modern methods and machinery, the country hopes to develop an agricultural program which will feed its people and provide oil, wine, almonds, and tropical fruits for export.

Libya's two chief cities are Tripoli, the capital, whose prewar population numbered more than 100,000; and Bengasi, with some 65,000.

NOTE: Libya may be located on the Society's map of Africa.

For additional information, see "Red Cross Girl Overseas," in the *National Geographic Magazine* for December, 1944; "Americans on the Barbary Coast," July, 1943; "Old-New Battlegrounds of Egypt and Libia," December, 1940; and "Cirenaica, Eastern Wing of Italian Libia," June, 1930; see also, in the GEOGRAPHIC SCHOOL BULLETINS, December 12, 1949, "Italian Libia and Somaliland to Be Free"; and "Fighting Senussi of Cirenaica Get Pledge," April 4, 1949.

U. S. AIR FORCE, OFFICIAL

DAZZLING WHITE BUILDINGS ON A BENGASI PLAZA SHOW SCARS OF WORLD WAR II BOMBING

Through the fierce desert battles between Allied and Axis armies, the Moslem tower (left background) still pointed skyward. Between February, 1941, and November, 1942, when Bengasi fell to the British 8th Army, the ancient Mediterranean port founded by the Greeks changed hands five times.

Colorado High Country Gets Atom Plant

ON a mile-high mountain shelf this spring, a new name will be added to the nation's atomic map: Rocky Flats, Colorado.

Midway between the college towns of Golden and Boulder, hard against the first foothills of the Colorado Rockies, is a plateau pocket 6,000 feet above the sea which has earned its name—it is both flat and rocky. In front is the dry Denver plain; behind march the sentinel peaks of the mid-continent mountain wall, the Continental Divide.

Gold Brought First Settlers

Construction of a $45,000,000 "secret operations" production plant for the Atomic Energy Commission on this site some 17 miles northwest of Denver will bring the three-wedged red warning sign of atomic science into a spectacular region where distances begin to be measured vertically and the mountain echoes tell of gold.

Gold in the hills and canyons around Rocky Flats opened Colorado. The Pikes-Peak-or-bust gold-rushers of 1859 surged north pell-mell along the Front Range after discovery of a rich lode vein on a Clear Creek branch west of Denver. The town of Golden, Colorado's early capital, saw boom times as a supply center for mining camps which dotted the mountain slopes with tunnels and placer diggings.

Buffalo Bill Cody was 13 years of age when "Jefferson Territory" was formed around Denver. Today his grave lies on Lookout Mountain behind Golden. The town is now known around the world as the home of the Colorado School of Mines.

Trains puff up dizzy grades on narrow-gauge rail lines and teeter "on the brims of sombreros" to reach many of the old mining fields. But the massive ridge of the Rockies was a barrier which diverted transcontinental travel around Colorado. It was not until the 1920's that Moffat Tunnel was bored through six miles of mountain high above Rocky Flats, and the "high iron" struck straight west across the Continenal Divide from Denver.

Glacier Is Boulder's Water Reservoir

Colorado still mines gold, as well as silver, lead, zinc, copper, molybdenum, tungsten, vanadium, coal, and oil-rich shale. Its modern mining "rush," however, has been for uranium. On the desolate Colorado Plateau west of the Rockies, prospectors with Geiger counters roam sandstone draws and mesas searching for canary-yellow carnotite ore that is "gold" to the atomic-energy program.

Boulder, home of the University of Colorado (illustration, next page), a dozen miles north of Rocky Flats, boasts that it is the only city in America with exclusive rights to a glacier. Tourists from many parts of the world join the townspeople once a year in climbing to the Arapaho ice sheet that serves Boulder as a frozen reservoir.

Between the plateau floor of Rocky Flats and jagged mountain crests more than 14,000 feet in the clouds, travelers can see five climatic "life

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the island's 30,000 inhabitants. Across the world, in Rotorua, New Zealand, city fathers are saving money by piping hot water from near-by geysers to heat public buildings.

NOTE: For additional information, see "Fabulous Yellowstone," in the *National Geographic Magazine* for June, 1940; and "Waimangu and the Hot-Spring Country of New Zealand," August, 1925.

G. A. GRANT, COURTESY NATIONAL PARK SERVICE

ONCE AN HOUR, OLD FAITHFUL SHOOTS A COLUMN OF HOT WATER VAPOR 140 FEET INTO THE AIR

This giant geyser, one of the wonders of Yellowstone National Park, erupts so regularly that, as one explosion subsides, rangers post the time for the next one. Through the years the interval between eruptions has increased slightly.

Towns of northernmost Mississippi, Alabama, and Georgia are closer to the North Pole than Africa's southernmost tip is to the South Pole.

Man-eating tigers are usually old and no longer able to catch and kill forest game. When once they find how easy it is to kill men, they never stop.

The first state visit of a reigning British king to Stratford on Avon where William Shakespeare was born in 1564 did not occur until April of 1950. Yet London is only 92 miles away.

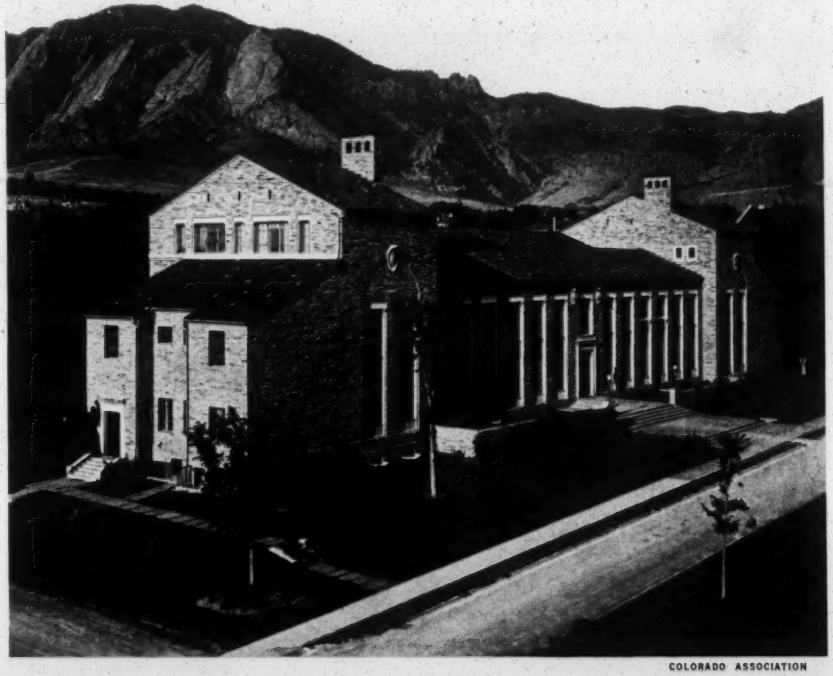
zones." Ponderosa pine and Douglas fir give way to Engelmann's spruce, lodgepole pine, and finally to treeless expanses where the winds carry the chill of Arctic wastes.

This is Colorado's High Country, the gigantic wall against which the newest of America's "secret cities of the atom" will be built.

NOTE: Colorado appears on the Society's map of the Southwestern United States.

For further information, see "Mapping Our Changing Southwest," in the *National Geographic Magazine* for December, 1948; "Ancient Cliff Dwellers of Mesa Verde," September, 1948; "High Country of Colorado," July, 1946; "Down the Rio Grande," October, 1939; and "Colorado, A Barrier That Became a Goal," July, 1932 (out of print; refer to your library).

See also, in the GEOGRAPHIC SCHOOL BULLETINS, May 3, 1948, "Colorado, Early Source, Hunts More Uranium."



COLORADO ASSOCIATION

BUILDINGS OF THE UNIVERSITY OF COLORADO HARMONIZE WITH THEIR MOUNTAIN BACKGROUND

The Rockies rise directly behind Boulder, the college town a few miles northwest of Denver. Water from their slopes flows across the campus in neat irrigation ditches to keep the grass green. Field trips in connection with courses take students over stiff trails to trout streams and glaciers.

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